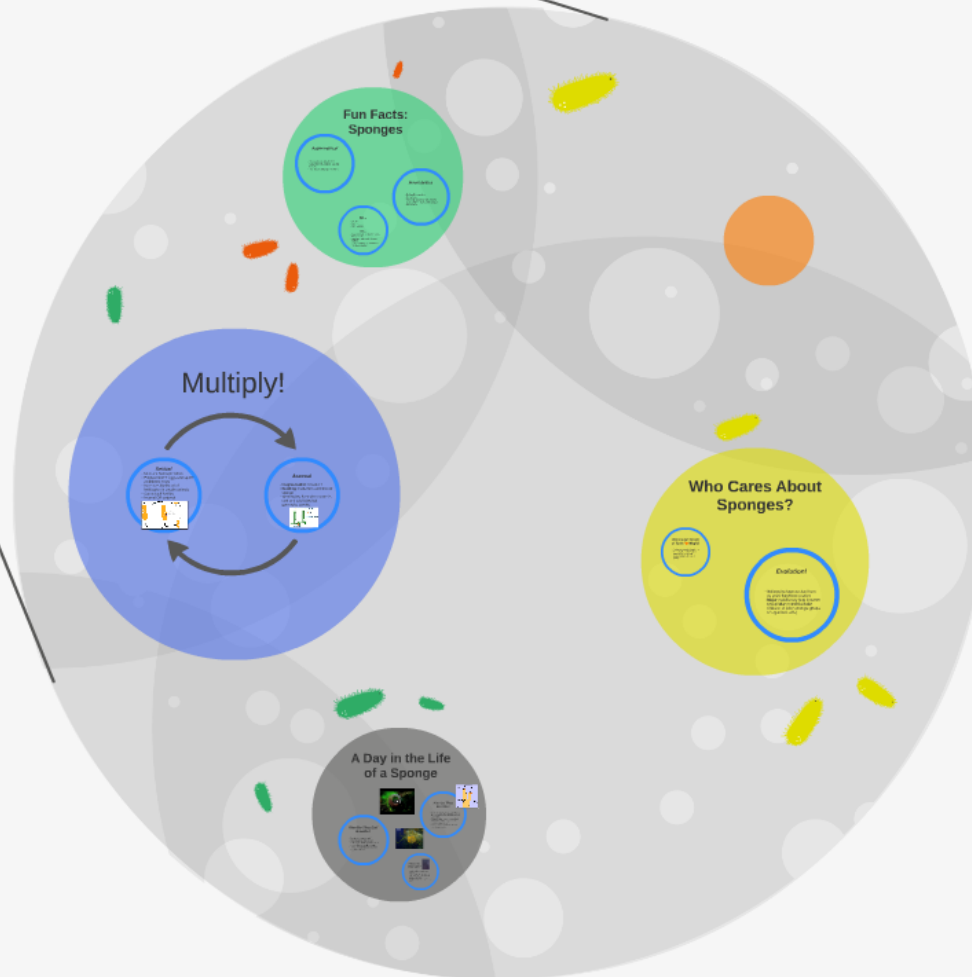


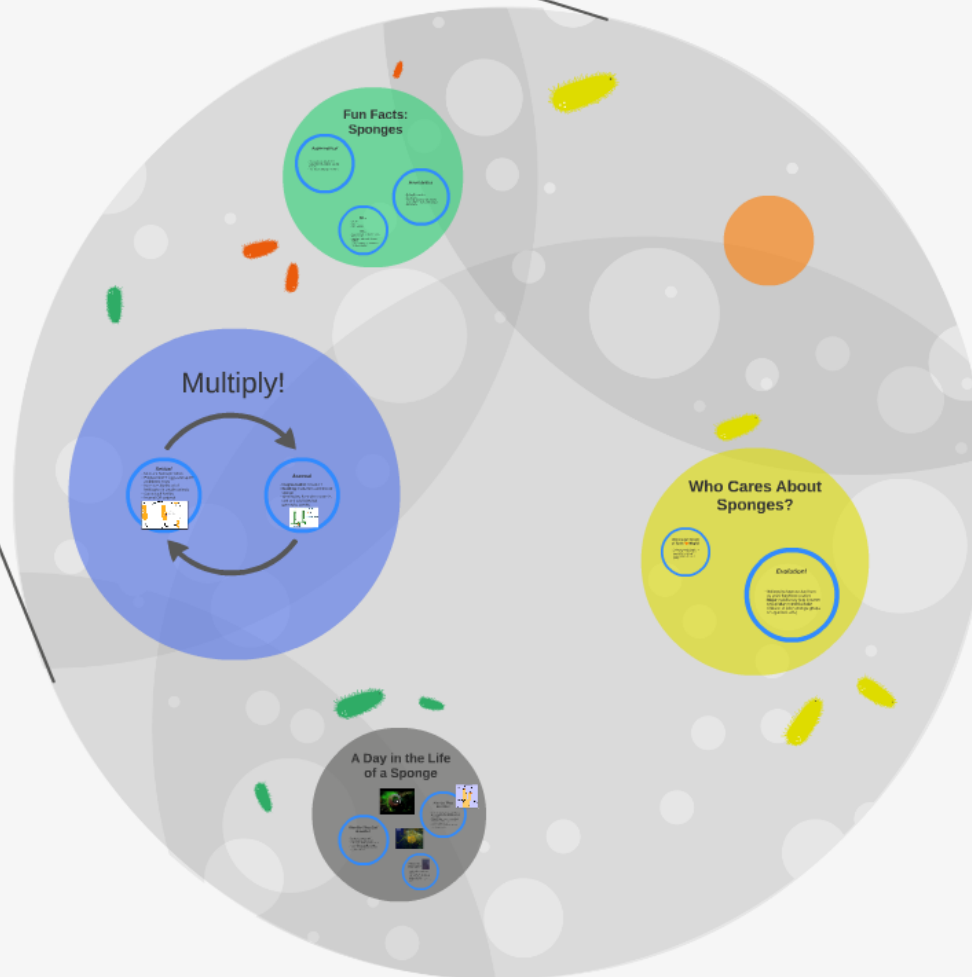


Sponges: Phylum Porifera (Invert.)





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Fun Facts: Sponges

Asymmetrical

- You could not divide the organism into similar-looking halves.
- No "head", left, right, bottom

Invertebrates

- No backbone/spine
- No cell wall
- Most reproduce sexually (some asexually) <-- more on that later!
- Multicellular

No...

- tissues
- organs
- organ systems

Yes...

- 5,000 species; variety of shapes, sizes & colors
- found in shallow water (mostly marine)
- unspecialized cells-->transform into what's needed

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A Day in the Life of a Sponge



How Do They Eat/ Breathe?

- *Porifera* = "pore bearer"
- **Filter feeders:** filter small particles of food from water as it passes by or through sponge
- "Eats" bacteria and other small organic particles



How Do They Breathe?

- 1 cm³ of sponge tissue can filter 20 liters of water a day, 20,000 times its own volume!
- Taking oxygen from the water that they filter through the pores and canals in their bodies
- Send carbon dioxide out with the water they excrete.

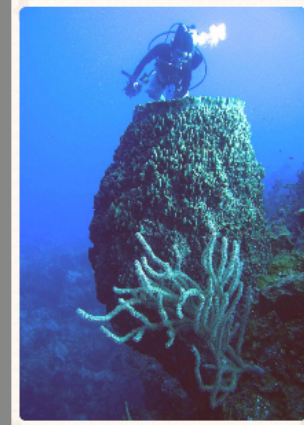


Where Do They Live?



- most in shallow areas of ocean (salt water)
- some species live in fresh water (150 species of the known 5,000 species of sponges)
- **Sessile:** permanently attached to surface

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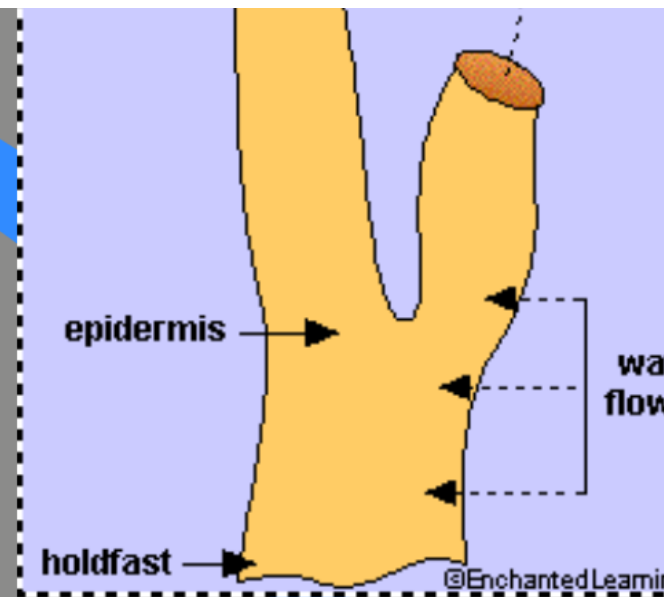
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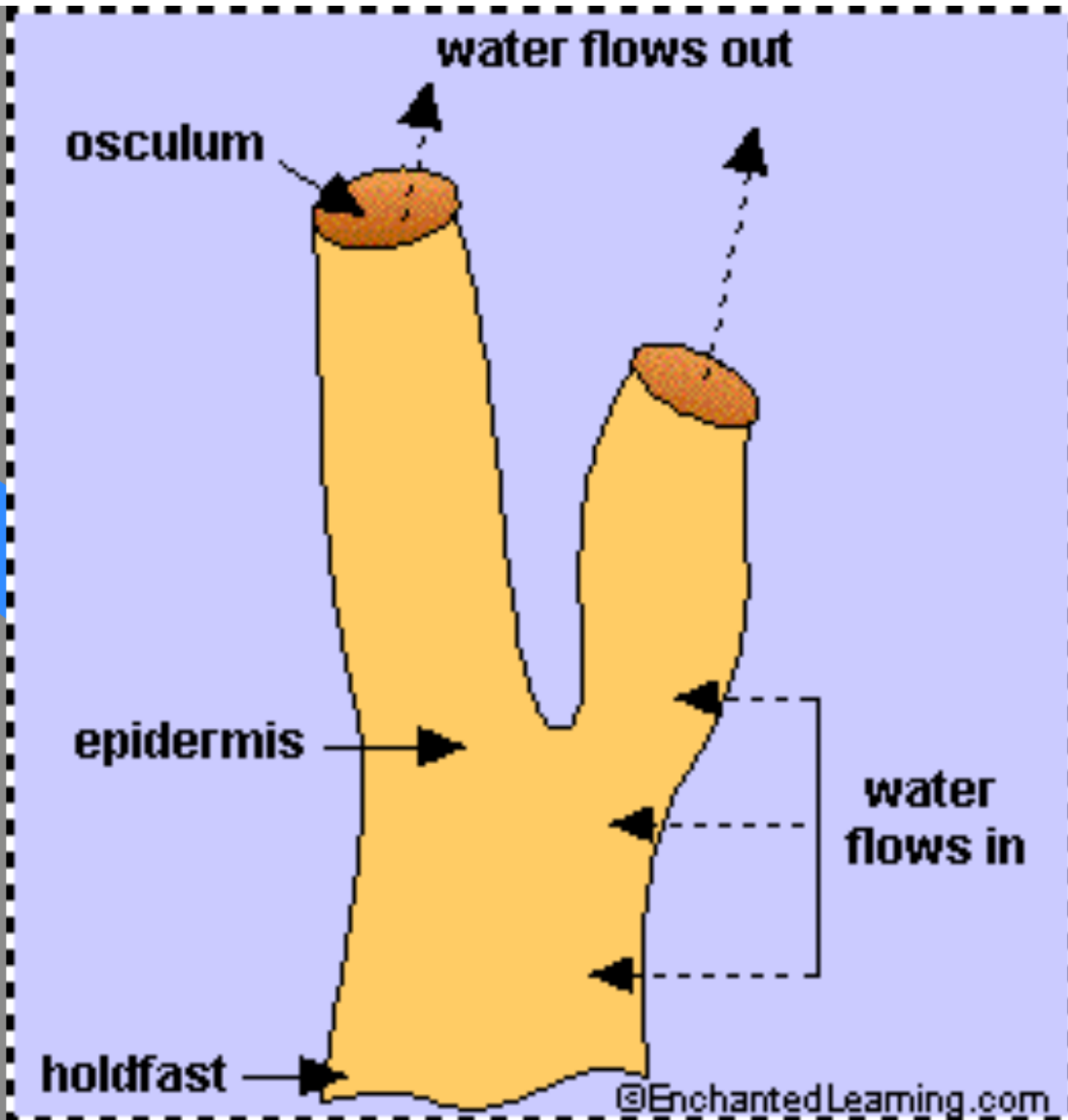
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Who Cares About Sponges?

One Large Group of Cells → Magic!

- Can be separated into individual types of cells but if left alone (over time) the cells will reorganize back into a full sponge

Evolution!

- Believed to have evolved from colonial, flagellated protists
- **Major** evolutionary step between **unicellular** → **multicellular** (division of labor amongst groups of organized cells)

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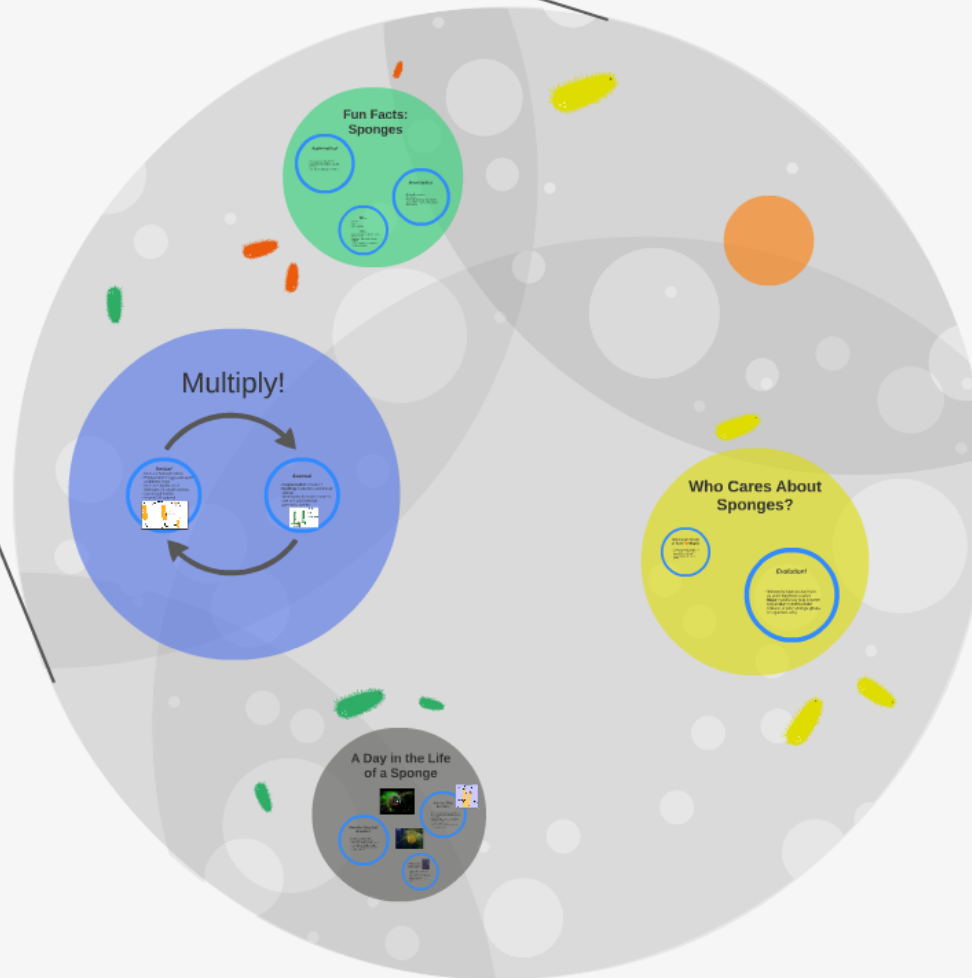
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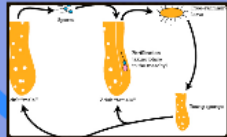
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Multiply!

Sexual

- Most are hermaphrodites
- Produce BOTH eggs and sperm at different times
- Increases likelihood of fertilization in sessile animals
- Cannot self-fertilize
- Internal OR external



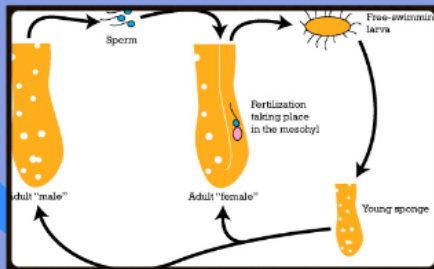
Asexual

- **Fragmentation**: break off
- **Budding**: buds form and drop off sponge
- **Gemmules**: form when water is cool and adult dies but gemmules survive



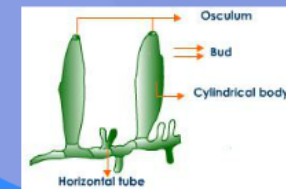
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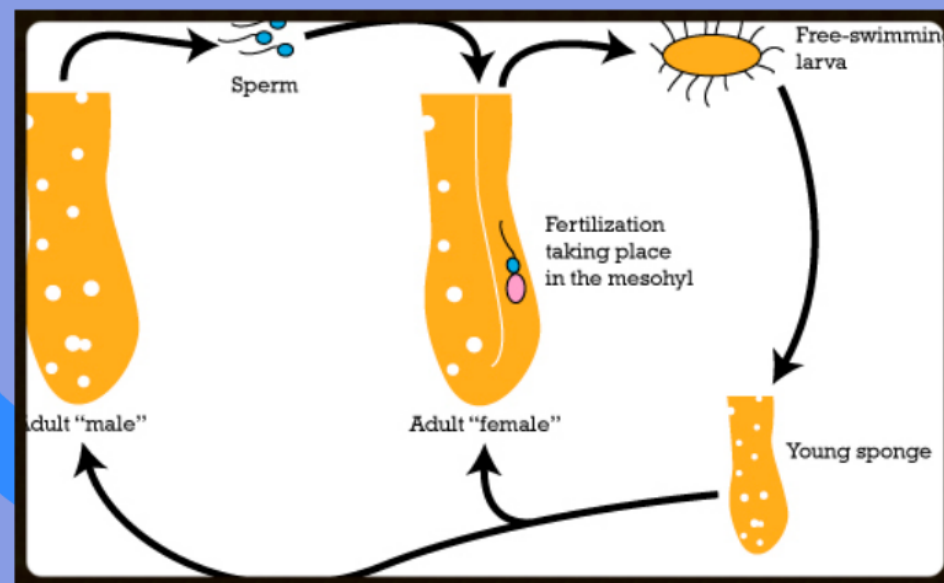
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